



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/846,408	05/01/2001	Scott Baggs	10004917-1	4007

7590

07/01/2004

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P. O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER

COUSO, YON JUNG

ART UNIT	PAPER NUMBER
----------	--------------

2625

4

DATE MAILED: 07/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/846,408

Applicant(s)

BAGGS, SCOTT

Examiner

Yon Couso

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-13, 24-26 is/are allowed.
- 6) ☒ Claim(s) 14-20 and 27 is/are rejected.
- 7) ☒ Claim(s) 21-23 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2,3.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 2625

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 14-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Mancuso et al.

As per claim 14, Mancuso teaches an image processing system suited for post-processing compressed and decompressed images, the system comprising: means for analyzing data associated with a plurality of picture elements comprising at least one image frame to identify portion of the at least one image frame that contain image artifacts (column 2, lines 45-46 and column 4, lines 4-12); means for smoothing at least one data value associated with the plurality of picture elements in the identified sub-portion of the at least one image frame (column 3, lines 15-18 and column 4, lines 13-41); and means for assembling an image artifact reduced image comprising smoothed picture elements (output in figure 1).

As per claim 15, Mancuso teaches means for analyzing comprises performing at least one statistical test on the picture element data values on a sub-portion of the at least one image frame (column 2, lines 46-51).

As per claim 16, Mancuso teaches the means for smoothing comprises mathematical combination of a picture element of interest with an adjacent picture

Art Unit: 2625

element in a first direction to form a first smoothing result, followed by a mathematical combination of the picture element of interest with an adjacent picture element in a second direction using the first smoothing result for the picture element of interest data value for those cases where the picture element of interest is adjacent to a block as defined by a block sensitivity value (column 4, lines 14-41).

As per claim 17, it would have been inherent for modified picture element data to supercede unmodified picture element data because modified picture element data value is the latest computed picture element data and moreover, it is the enhanced value of the unmodified picture element data.

As per claim 18, Mancuso teaches at least one statistical test comprises determining the mean picture element data value on a sub-portion of the at least one image frame (column 4, lines 29-33).

As per claim 19, Mancuso teaches the mathematical combination of a picture element of interest with an adjacent picture element comprises determining the average data value of the picture element of interest and the adjacent picture element and updating the data value of the picture element of interest with the determined average (column 6, lines 37-41).

As per claim 20, Mancuso teaches a method for reducing image artifacts in a compressed and decompressed image, comprising: receiving picture element data associated with at least one image frame (column 4, lines 4-12)); segmenting the at least one image frame into a plurality of regions in accordance with a first viewer selected imaging parameter; analyzing the plurality of segmented regions to identify

Art Unit: 2625

regions that contain an image artifact in response to a second viewer selected imaging parameter (column 2, lines 45-46 and column 4, lines 4-12); processing the identified regions with an adaptive filter such that at least one picture element data parameter is adjusted in response to both a third and a fourth viewer selected imaging parameters (column 3, lines 15-18 and column 4, lines 13-41); and inserting adjusted picture element data values into the at least one image frame (output in figure 1).

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 27 is rejected under 35 U.S.C. 102(b) as being anticipated by
Lakshminarayanan et al.

As per claim 27, Lakshminarayanan teaches a method for identifying image artifacts introduced in a compressed and decompressed sub-region of an image, comprising: performing at least one statistical test over a plurality of picture element data values comprising the sub-region to generate a test result (column 8, line 55-column 9, line 9); determining an extrema element data value for the sub-region (column 9, lines 10-19; and determining when a mathematical combination of the maximum picture element data value and the test result exceeds a predetermined threshold ($\min(\delta I)$ reads on this).

3. Claims 1-13, 24-26 are allowed.

Art Unit: 2625

4. The following is an examiner's statement of reasons for allowance: prior art fails to teach an image processing system suited for post-processing compressed and decompressed image, system comprising a region segmenter configured to sub-divide data representing at least one image frame to generate a plurality of image regions, an artifact detector configured to analyze each of the plurality of image regions for the existence of an image artifact, the artifact detector further configured to identify regions containing an image artifact, a filter configured to receive an indication of image regions containing an image artifact from the artifact detector, wherein the filter smoothes at least one picture element data value in accordance with at least one viewer selected parameter to generate modified picture element data, and an output memory communicatively coupled with the filter wherein the output memory assembles an image artifact reduced image frame comprising unmodified picture element data from at least one image frame and smoothed picture element data to generate an artifact reduced representation of the at least one image frame.

Prior art also fails to teach A method for smoothing at least one data value associated with a plurality of picture elements containing image artifacts introduced in a compressed and decompressed image, comprising, setting a plurality of counters and a plurality of thresholds in response to a plurality of viewer selected imaging parameters; systematically comparing each of a plurality of picture element data values with a data value associated with an adjacent picture element in a first direction to generate a first interim result, further comparing the first interim result with a first viewer selected imaging parameter, selectively modifying the data value for a picture element of interest

Art Unit: 2625

to generate a temporary picture element data value when the compared picture elements traverse a block boundary as defined by a second viewer selected imaging parameter, inserting temporary picture element data values; and systematically comparing each of the plurality of picture element data values, including the inserted temporary picture element data values with an adjacent picture element in a second direction to generate a second interim result, further comparing the second interim result with a first viewer selected imaging parameter, selectively modifying the data value for a picture element of interest to generate a final picture element data value when the compared picture elements traverse a block boundary as defined by a second viewer selected imaging parameter.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. Claims 21-23 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Komuro et al, Pourjavid and Westerman are also cited.

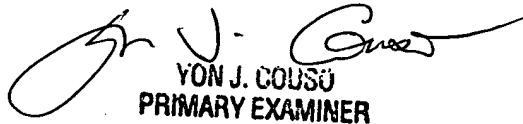
Art Unit: 2625

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yon Couso whose telephone number is (703) 305-4779.

The examiner can normally be reached on 8:30 am –5:00 pm from Monday to Friday

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta, can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800.


YON J. COUSO
PRIMARY EXAMINER

Yjc

June 22, 2004